

Pennsylvania Ground Critical Care Transport Educational Program: Course Sponsor Checklist

Course Name _____

Sponsor _____

Sponsor Address _____ Sponsor Phone# _____

Contact Person _____ Contact Email _____ Contact Phone# _____

Instructions: Please complete this checklist, including references to supporting documentation, e.g. textbook, handout, PowerPoint presentation, etc. Return the completed checklist and associated course materials to the Pennsylvania Department of Health, Bureau of Emergency Medical Services 625 Forster Street • Room 606 • Harrisburg, PA 17120.

Educational Objective Description	Course Material Reference
I. PREPARATORY	Course sponsors please note:
Expands upon the paramedic's previous knowledge of EMS systems by integrating a comprehensive understanding of critical care transportation, which includes air and ground operations in both the prehospital and interfacility setting.	When citing references, please provide the associated textbook name and page number(s); for PowerPoint presentations provide specific slide number(s). Sections not properly referenced may result in the checklist being returned to the sponsor for correction and resubmission.
EMS Systems: <input type="checkbox"/> History of critical care transport <input type="checkbox"/> Modes of critical care transport <input type="checkbox"/> Crew configurations <input type="checkbox"/> Prehospital v. Interfacility transports <input type="checkbox"/> Ethical considerations	
Patient safety during transport: <input type="checkbox"/> Provider knowledge/experience <input type="checkbox"/> Available resources	
Medical Director support: <input type="checkbox"/> Declination of transport for safety reasons <input type="checkbox"/> Education of facilities and physicians on safe transport practices	
Documentation: <input type="checkbox"/> Documenting the critical care assessment <input type="checkbox"/> Supplemental documentation for reimbursement and operations	
EMS System Communications: <input type="checkbox"/> Online Medical Direction	

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Therapeutic Communications: <input type="checkbox"/> Effective communications with family members	
Medical-Legal Issues and Ethics: <input type="checkbox"/> End of life issues during interfacility transport	
II. PHARMACOLOGY Review and expand upon comprehensive knowledge of pharmacology at the paramedic level to include those medications commonly encountered during a critical care interfacility transport.	
Review of medications commonly used during transport, including but not limited to: <input type="checkbox"/> Analgesics <input type="checkbox"/> Sedatives <input type="checkbox"/> Paralytics <input type="checkbox"/> Induction agents <input type="checkbox"/> Antiarrhythmics <input type="checkbox"/> Antianginals <input type="checkbox"/> Antihypertensives <input type="checkbox"/> Vasopressors <input type="checkbox"/> Thrombolytics <input type="checkbox"/> Bronchodilators <input type="checkbox"/> Antibiotics <input type="checkbox"/> Corticosteroids <input type="checkbox"/> Antiemetics <input type="checkbox"/> Diuretics <input type="checkbox"/> Insulin <input type="checkbox"/> Anticonvulsants <input type="checkbox"/> Anticoagulants <input type="checkbox"/> Anti-Platelet agents <input type="checkbox"/> Tocolytics <input type="checkbox"/> Prostaglandins <input type="checkbox"/> Parenteral nutrition	
<input type="checkbox"/> Pharmacodynamics	

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Medication Administration: <ul style="list-style-type: none"> <input type="checkbox"/> Use of intravenous infusion pumps <input type="checkbox"/> Infusion considerations for central vs. peripheral vein 	
III. AIRWAY MANAGEMENT, RESPIRATION AND ARTIFICIAL VENTILATION Review and expand upon the comprehensive knowledge of airway management, respiration and artificial ventilation from the paramedic level to include advanced airway management and ventilation modalities that are associated with the critical care patient management.	
<ul style="list-style-type: none"> <input type="checkbox"/> Drug facilitated airway control (RSI) 	
<ul style="list-style-type: none"> <input type="checkbox"/> Tracheostomy management 	
Airway control in special patient populations, including but not limited to:	
<ul style="list-style-type: none"> <input type="checkbox"/> Neonates/infants 	
<ul style="list-style-type: none"> <input type="checkbox"/> Pediatrics 	
<ul style="list-style-type: none"> <input type="checkbox"/> Bariatric patients 	
<ul style="list-style-type: none"> <input type="checkbox"/> Assessment and management of the difficult airway 	
<ul style="list-style-type: none"> <input type="checkbox"/> Arterial blood gas interpretation and monitoring 	
Mechanical ventilation:	
<ul style="list-style-type: none"> <input type="checkbox"/> Principles of ventilation 	
<ul style="list-style-type: none"> <input type="checkbox"/> Patient assessment for mechanical ventilation 	
<ul style="list-style-type: none"> <input type="checkbox"/> Ventilator modes and parameters 	
<ul style="list-style-type: none"> <input type="checkbox"/> Troubleshooting 	
IV. ASSESSMENT	
Expands upon the traditional paramedic-level assessment to include those techniques and parameters associated with a critical care setting. The critical care assessment includes an expanded physical assessment, use of diagnostic instruments and fundamental depth/foundational breadth interpretation of laboratory values and medical imaging.	
History taking:	
<ul style="list-style-type: none"> <input type="checkbox"/> Differentiate between essential information in the prehospital and interfacility transport setting 	
<ul style="list-style-type: none"> <input type="checkbox"/> Effectively communicating with other healthcare professionals involved in the transfer of care process 	

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Laboratory data: <ul style="list-style-type: none"> <input type="checkbox"/> Understanding of critical laboratory values <input type="checkbox"/> Using portable blood analysis devices 	
Medical imaging: <ul style="list-style-type: none"> <input type="checkbox"/> Radiographs <input type="checkbox"/> CT scans <input type="checkbox"/> MRI <input type="checkbox"/> Ultrasound 	
Invasive pressure monitoring: <ul style="list-style-type: none"> <input type="checkbox"/> Invasive vs. non-invasive pressure monitoring in prehospital environment <input type="checkbox"/> Arterial pressure monitoring <input type="checkbox"/> Venous pressure monitoring: <ul style="list-style-type: none"> <input type="checkbox"/> Triple lumen catheters <input type="checkbox"/> SCVO2 catheters <input type="checkbox"/> Pulmonary artery catheters <input type="checkbox"/> Invasive monitoring catheter/line management <input type="checkbox"/> Calibration and use of pressure transducers <input type="checkbox"/> Interpreting pressure measurements 	
V. MEDICAL Builds upon the principles of pathophysiology and assessment findings used to formulate a field impression to understand the often complex medical problems encountered during the critical care interfacility transport.	
Neurology: <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, neurological focused assessment and management <input type="checkbox"/> Use of NIH stroke assessment tool <input type="checkbox"/> Thrombolytics <input type="checkbox"/> Therapeutic hypothermia <input type="checkbox"/> Intra-cranial pressure monitoring 	
Abdominal/GI disorders: <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, GI focused assessment and management <input type="checkbox"/> Management of enteral feeding devices <input type="checkbox"/> Management of drains 	

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<ul style="list-style-type: none"> <input type="checkbox"/> Management of vacuum closure devices <input type="checkbox"/> Altitude considerations 	
<p>Infectious Diseases:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, focused assessment, PPE/universal precautions and management <input type="checkbox"/> Use of antibiotics, antiviral and antifungal medications <input type="checkbox"/> Infections in special patient populations <input type="checkbox"/> The immuno-suppressed patient <input type="checkbox"/> Post exposure prophylaxis for the healthcare provider 	
<p>Endocrinology:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, focused assessment and management <input type="checkbox"/> Types of insulin and administration technique <input type="checkbox"/> Correctable endocrine conditions, e.g. hypoglycemia, etc. <input type="checkbox"/> Adrenal insufficiency 	
<p>Psychiatric:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ground and air transport safety considerations <input type="checkbox"/> Use of physical and/or pharmacological restraint 	
<p>Cardiology:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, cardiovascular focused assessment and management. Reinforce the importance of prehospital STEMI recognition through the use of 12-lead EKGs and the use of therapeutic hypothermia in post-resuscitation management. <input type="checkbox"/> Electrophysiology devices: <ul style="list-style-type: none"> <input type="checkbox"/> Pacemakers, including epicardial and transvenous <input type="checkbox"/> Cardiac assist devices: <ul style="list-style-type: none"> <input type="checkbox"/> LVAD and BiVAD <input type="checkbox"/> Intra-aortic balloon pump (IABP) <input type="checkbox"/> Extracorporeal membrane oxygenation (ECMO) <input type="checkbox"/> Management of mediastinal chest tubes 	

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<p>Toxicology:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, toxicology assessment and management. Reinforce the importance of safety assessment, PPE and decontamination procedures prior to transport <input type="checkbox"/> Intentional vs. unintentional poisoning <input type="checkbox"/> General management principles: <ul style="list-style-type: none"> <input type="checkbox"/> Initial management <input type="checkbox"/> History taking and assessment <input type="checkbox"/> Symptoms of poisoning or toxic exposure <input type="checkbox"/> Physical exam <input type="checkbox"/> Laboratory studies <input type="checkbox"/> Removal, elimination or disruption of toxins <input type="checkbox"/> Supportive and emotional care <input type="checkbox"/> Safety issues during transport <input type="checkbox"/> Pharmacologic properties of drugs <input type="checkbox"/> Toxicity and treatment of poisoning by specific drugs: <ul style="list-style-type: none"> <input type="checkbox"/> Acetylsalicylic Acid <input type="checkbox"/> Acetaminophen <input type="checkbox"/> Antidepressants, e.g. Tricyclics <input type="checkbox"/> Benzodiazepines <input type="checkbox"/> Cardiac drugs, i.e. beta blockers, calcium channel blockers, digitalis, etc. <input type="checkbox"/> Cocaine and other illicit drugs <input type="checkbox"/> Cyanide <input type="checkbox"/> Hallucinogens <input type="checkbox"/> Alcohol <input type="checkbox"/> Ethylene Glycol <input type="checkbox"/> Carbon Monoxide <input type="checkbox"/> Snakebite: <ul style="list-style-type: none"> <input type="checkbox"/> Recognition of venomous snakes <input type="checkbox"/> Initial management <input type="checkbox"/> Advanced treatment during transport, including anti-venom 	
<p>Respiratory:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review of anatomy, physiology, pathophysiology, respiratory focused assessment and management <input type="checkbox"/> CPAP and BiPAP 	

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Hematology: <ul style="list-style-type: none"> <input type="checkbox"/> Administration of blood and blood products: <ul style="list-style-type: none"> <input type="checkbox"/> Indications <input type="checkbox"/> Whole blood, blood components, and substitutes <input type="checkbox"/> Typing and compatibility <input type="checkbox"/> Pre-transfusion, concurrent, and post-transfusion assessment <input type="checkbox"/> Administration techniques <input type="checkbox"/> Management of transfusion complications <input type="checkbox"/> Documentation 	
Genitourinary/Renal: <ul style="list-style-type: none"> <input type="checkbox"/> Review anatomy, physiology, pathophysiology, focused assessment, and management <input type="checkbox"/> Insertion and management of a foley catheter <input type="checkbox"/> Management of: <ul style="list-style-type: none"> <input type="checkbox"/> Renal replacement therapy <input type="checkbox"/> Nephrostomy tubes <input type="checkbox"/> Supra-pubic catheters 	
Gynecology: <ul style="list-style-type: none"> <input type="checkbox"/> Review anatomy, physiology, pathophysiology, focused assessment, and management 	
Non-traumatic Musculoskeletal Pain: <ul style="list-style-type: none"> <input type="checkbox"/> Review anatomy, physiology, pathophysiology, focused assessment, and management 	
Eyes, Ears, Nose and Throat: <ul style="list-style-type: none"> <input type="checkbox"/> Review anatomy, physiology, pathophysiology, focused assessment, and management 	
Shock and Resuscitation: <ul style="list-style-type: none"> <input type="checkbox"/> Review types of shock, assessment parameters and management principles 	
VI. TRAUMA Review pathophysiology, assessment and management of the trauma patient. Review and discuss trauma patient destination decisions relative to ground vs. air transport both in the prehospital and interfacility transport setting	

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<p>Bleeding:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review the pathophysiology and management of bleeding, including hemostatic agents and commercial tourniquets <input type="checkbox"/> DIC/coagulopathy <input type="checkbox"/> Assessment and laboratory studies associated with the anti-coagulated patient <input type="checkbox"/> Management of the anti-coagulated patient: <ul style="list-style-type: none"> <input type="checkbox"/> Fresh frozen plasma <input type="checkbox"/> Vitamin K <input type="checkbox"/> Clotting factors 	
<p>Chest Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of chest trauma <input type="checkbox"/> Management of chest tubes 	
<p>Abdominal and Genitourinary Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of abdominal and genitourinary trauma <input type="checkbox"/> Understanding ultrasound images as part of the F.A.S.T exam 	
<p>Orthopedic Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of orthopedic trauma <input type="checkbox"/> Use of commercial pelvic stabilization devices <input type="checkbox"/> Manual reduction of extremity fracture or dislocation with vascular compromise 	
<p>Soft Tissue Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of soft tissue trauma <input type="checkbox"/> Recognition and management of crush syndrome <input type="checkbox"/> Recognition and management of compartment syndrome <input type="checkbox"/> Administration of tetanus immunization 	
<p>Head, Facial, Neck and Spine Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of head, facial, neck and spine trauma <input type="checkbox"/> Advanced management of spinal cord injuries 	
<p>Nervous System Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management 	

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<p>Special Considerations in Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of special patient population trauma: <input type="checkbox"/> Pregnant patient <input type="checkbox"/> Pediatric patient <input type="checkbox"/> Geriatric patient <input type="checkbox"/> Cognitively impaired patient 	
<p>Environmental Emergencies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of environmental emergencies <input type="checkbox"/> Management of suspension trauma 	
<p>Multi-System Trauma:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review pathophysiology, assessment and management of multi-system trauma <input type="checkbox"/> Management of blast injuries 	
<p>VII. SPECIAL PATIENT POPULATIONS</p> <p>Builds on paramedic level assessment findings, pathophysiology, and psychosocial needs to effectively manage special patient populations in the prehospital setting and during interfacility transport.</p>	
<p>Obstetrics:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fetal assessment <input type="checkbox"/> Fetal monitoring data <input type="checkbox"/> Ultrasound images related to ectopic pregnancy <input type="checkbox"/> Fetal heart rate abnormalities: <ul style="list-style-type: none"> <input type="checkbox"/> Variability <input type="checkbox"/> Periodic Changes <input type="checkbox"/> Acceleration (Variable, Early, Late, Sinusodal) <input type="checkbox"/> Bradycardia/Tachycardia <input type="checkbox"/> Contributing factors to fetal distress <input type="checkbox"/> Pre-eclampsia/eclampsia <input type="checkbox"/> Administration of tocolytics <input type="checkbox"/> Complications of pregnancy: <ul style="list-style-type: none"> <input type="checkbox"/> Amniotic fluid embolism <input type="checkbox"/> Breech presentation <input type="checkbox"/> Post-partum hemorrhage <input type="checkbox"/> Uterine inversion 	

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<ul style="list-style-type: none"> <input type="checkbox"/> Precipitous delivery <input type="checkbox"/> Retained placenta <input type="checkbox"/> Shoulder dystocia <input type="checkbox"/> Umbilical prolapse <input type="checkbox"/> Gestational diabetes <input type="checkbox"/> Placenta abruption <input type="checkbox"/> Placenta previa <input type="checkbox"/> Disseminated intravascular coagulation (DIC) <input type="checkbox"/> Multiple gestation <input type="checkbox"/> HELLP syndrome <input type="checkbox"/> Pre-term labor 	
<p>Neonatal Care:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Respiratory disorders, e.g. surfactant deficiency <input type="checkbox"/> Cardiac structural and flow abnormalities: <ul style="list-style-type: none"> <input type="checkbox"/> Patent ductus arteriosm (PDA) <input type="checkbox"/> Patent foramen ovale (PFO) <input type="checkbox"/> Ventricular septal defect (VSD) <input type="checkbox"/> Tetralogy of fallots <input type="checkbox"/> Transposition of the great vessels <input type="checkbox"/> Sepsis <input type="checkbox"/> Thermoregulation using an isolette <input type="checkbox"/> Critical neonate laboratory values 	
<p>Pediatrics:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review age-related assessment findings, anatomic and physiologic variations, developmental stage related assessment and treatment modifications of the pediatric-specific major or common diseases and/or emergencies 	
<p>Geriatrics:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Review normal and abnormal changes associated with aging, pharmacokinetic changes, psychosocial and economic aspects of aging, polypharmacy, and age-related assessment and treatment modifications for the major or common geriatric diseases and/or emergencies 	
<p>Patients with Special Challenges:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Patients requiring specialty equipment and staffing support during interfacility transport <ul style="list-style-type: none"> <input type="checkbox"/> Pre-transport briefing of non-EMS caregivers 	

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<p>VIII. PSYCHOMOTOR SKILLS REVIEW</p> <p>In addition to those skills outlined in the National Scope of Practice Model and authorized by the Pennsylvania Department of Health for the paramedic, the flight or ground critical care paramedic should be competent in the following psychomotor skills based on the depth/breadth previously described:</p>	
<p>Airway and Breathing:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Drug facilitated airway control, i.e. RSI <input type="checkbox"/> Operation of mechanical transport ventilators <input type="checkbox"/> Tracheostomy management 	
<p>Assessment and Monitoring:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maintenance and access to invasive pressure monitoring devices and interpretation of monitoring parameter information <input type="checkbox"/> Interpretation of critical laboratory values <input type="checkbox"/> Arterial blood gas interpretation <input type="checkbox"/> Interpretation of medical imaging information <input type="checkbox"/> Interpretation of fetal monitoring data <input type="checkbox"/> Operation of portable blood analysis equipment 	
<p>Pharmacology:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Expanded administration of enteral and parenteral prescription medications as ordered by a medical command physician or by approved protocol <input type="checkbox"/> Infusion of blood, blood products or blood substitutes <input type="checkbox"/> Initiation and/or maintenance of thrombolytics 	
<p>Medical & Cardiac Care:</p> <ul style="list-style-type: none"> <input type="checkbox"/> IABP monitoring <input type="checkbox"/> ECMO monitoring <input type="checkbox"/> VAD monitoring <input type="checkbox"/> Pacemakers <input type="checkbox"/> Feeding tube management <input type="checkbox"/> Foley catheter insertion/management 	

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Trauma Care: <input type="checkbox"/> Chest tube management <input type="checkbox"/> Drain management <input type="checkbox"/> ICP monitoring	
Special Patient Populations: <input type="checkbox"/> Isolette operations <input type="checkbox"/> Fetal monitoring	

Notes: